DECISION RECORD

DOI-BLM-NM-P010-2011-130-EA

Proposed Decision: It is my decision to implement the proposed action as described in DOI-BLM-NM-P010-2011-130-EA and to issue permit for the allotment analyzed in this document. The mitigation measures identified in the attached EA have been formulated into terms and conditions that will be attached to the grazing permit. This decision incorporates, by reference, those conditions identified in the attached Environmental Assessment. A summary table follows:

Table 1. Animal Units/Animal Unit Months

Allotment Number	Allotment Name	Acres of Public Land	Percent Public Land	Animal Units Authorized	Animal Unit Months Authorized	Livestock	Livestock Number
64090	Indian Bluff	41,417	73%	340	2979	Sheep	1700
64090	Indian Bluff			8	70	Horse	8
64090	Indian Bluff			835	7315	Cattle	835
64090	Indian Bluff			113	990	Cattle	990
Totals		**41,417**		**1296**	**4354**		

Rationale: Based on the rangeland health assessments (RHAs) and previous monitoring, resource conditions on this allotment are sufficient and sustainable to support the level of use outlined in the term grazing permit.

The Proposed Action will be in compliance with the 1997 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

If you wish to protest this proposed decision in accordance with 43 CFR 4160.2, you are allowed 15 days to do so in person or in writing to the authorized officer, after the receipt of this decision. Please be specific in your points of protest.

The protest shall be filed with the Field Manager, Bureau of Land Management, 2909 West 2nd, Roswell, NM 88201. This protest should specify, clearly and concisely, why you think the proposed action is in error.

In the absence of a protest within the time allowed, the above decision shall constitute my final decision. Should this notice become the final decision, you are allowed an additional 30 days within which to file an appeal for the purpose of a hearing before the Interior Board of Land Appeals, and to petition for stay of the decision pending final determination on the appeal (43 CFR 4.21 and 4.410). If a petition for stay is not requested and granted, the decision will be put into effect following the 30-day appeal period. The appeal and petition for stay should be filed with the Field Manager at the above address. The appeal should specify, clearly and concisely, why you think the decision is in error. The petition for stay should specify how you will be harmed if the stay is not granted.

/s/ Jerry Dutchover — 10/05/2011

Jerry Dutchover — Date

Acting Assistant Field Manager

FINDING OF NO SIGNIFICANT IMPACT/RATIONALE

DOI-BLM-NM-P010-2011-130-EA

FINDING OF NO SIGNIFICANT IMPACT: I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined the proposed action will not have significant impacts n the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Rational for Recommendations: The proposed action would not result in any undue or unnecessary environmental degradation. The proposed action will be in compliance with the 1997 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

. /s/ Jerry Dutchover 10/05/2011
Jerry Dutchover Date
Acting Assistant Field Manager, Resources

ENVIRONMENTAL ASSESSMENT

GRAZING AUTHORIZATION

For

Allotment 64090

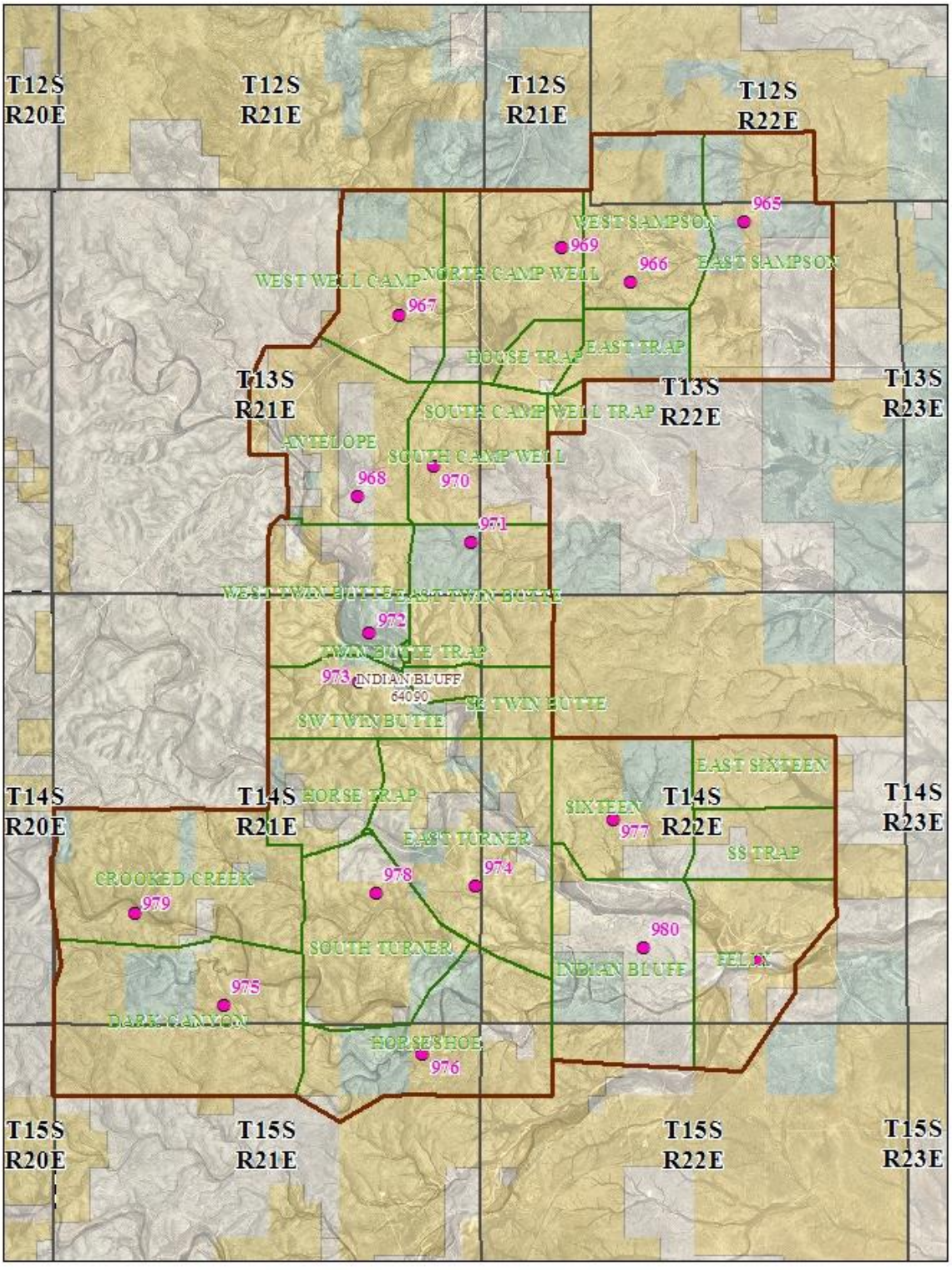
(See Map for Location)

DOI-BLM-NM-P010-2011-130-EA

May, 2011

U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico

Allotment 64090 - Indian Bluff



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I. BACKGROUND

Purpose and Need for the Proposed Action

The purpose of issuing a new grazing permit or lease would be to authorize livestock grazing on public range on Allotment 64090, Indian Bluff. When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) must conduct a site-specific NEPA analysis before issuing a lease to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing permit on this allotment. The permit would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, 4130.3-2, and 4180.1.

The scope of this environmental assessment is limited to the effects of issuing a new grazing permit on this allotment. Over time, the need could arise for subsequent management activities which relate to grazing authorization. These activities could include vegetation treatments (e.g., prescribed fires, herbicide projects), range improvement projects (e.g., fences, water developments), and others. Future rangeland management actions related to livestock grazing would be addressed in project specific NEPA documents as they are proposed.

Though this environmental assessment specifically addresses the impacts of issuing a grazing permit on this allotment, it does so within the context of overall BLM management goals. Allotment management activities would have to be coordinated with projects intended to achieve those other goals. For example, a vegetation treatment designed to enhance watershed condition or wildlife habitat may require rest from livestock grazing for one or more growing seasons. Requirements of this type would be written into the permit or lease as terms and conditions.

Conformance with Land Use Planning

The proposed action conforms to the 1997 Roswell Approved Resource Management Plan (RMP) and Record of Decision; and the 2000 New Mexico Standards for Public Land health and Guidelines for Livestock Grazing Management and Record of Decision as required by 43 CFR 1610.5-3.

Relationships to Statutes, Regulations, or Other Plans

The proposal to renew the livestock grazing permit on this allotment is in conformance with the 1994 Environmental Impact Statement for Rangeland Reform; the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (TGA) (43 U.S.C. 315 et seq.); the Public Rangelands Improvement Act of 1978 (PRIA) (43 U.S.C. 1901 et seq.).

II. PROPOSED ACTION AND ALTERNATIVES

Proposed Action (No Action) - Current Livestock Management

The proposed action is to issue a ten-year permit to graze cattle, sheep and horses on this allotment. Current permitted use based on long term monitoring and rangeland conditions. Additionally a rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. See Table 1 below for details of the individual allotments.

Table 1. Animal Units/Animal Unit Months							
Allotment Number	**Allotment Name**	**Acres of Public Land**	**Percent Public Land**	**Animal Units Authorized**	**Animal Unit Months Authorized**	**Livestock**	**Livestock Number**
64090	Indian Bluff	41,417	73%	340	2979	Sheep	1700
64090	Indian Bluff			8	70	Horse	8
64090	Indian Bluff			835	7315	Cattle	835
64090	Indian Bluff			113	990	Cattle	113
Totals		**41,417**		**1296**	**4354**		

There would be no changes from current livestock management as conducted by the allottee, or to existing range improvements already in place. Future projects or activities identified by the allottee or the BLM can still be considered for implementation. Rangeland monitoring would continue on the allotment and changes to livestock management would be made as necessary. If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken to mitigate those impacts.

No-Grazing Alternative

Under this alternative a new grazing permit would not be issued for this allotment. No grazing would be authorized on federal land on this allotment under this alternative. Under this alternative and based on the land status pattern within the allotment, approximately 83 miles of new fences would be required to exclude grazing on the federal land.

Alternatives Considered But Not Analyzed

Grazing with reduced numbers – BLM considered authorizing grazing with reduced numbers on this allotment. Grazing with reduced numbers would produce impacts similar to the proposed action. Additionally, this allotment meets the Standard for Public Land Health and monitoring studies do not indicate changes are necessary. Therefore, BLM will not analyze this alternative.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

General Setting

This allotment is located in the Thirteen Mile Draw, Zubi Draw, Outlet Rocky Arroyo, Headwaters Rocky Arroyo, Made Well Draw, Lower Twin Butte Canyon, Made Well Draw-Rio Felix, Outlet Monument Canyon, Crook Creek – Rio Felix and Outlet Crooked Creek watersheds, in Chaves County about 22 miles southwest of Roswell. See Table 1 and Location Map.

Elevations range from about 4,700 feet on the western edge of allotment 64090 to 3,950 feet along the eastern edges of the allotment. The climate is semi-arid with normal annual temperatures ranging from 20^0F to 95^0F, extremes of 29 below zero to 103 degrees are also possible. Average annual precipitation is approximately 13-16 inches in the form of rainfall and snow.

The predominant parent material for the shallow soils is limestone on most, if not all, of the hills. Loamier soils are found in the swales and floodplains of the larger drainages which can support dense ground cover of tobosa grass with cholla in varying densities. The shallow soils generally support a mixed desert shrub type such as creosotebush, catclaw acacia, sotol, cholla, prickly pear cactus, little leaf sumac, agave and beargrass. Larger shrubs of little leaf sumac and catclaw acacia occur in the draws and floodplains and include tree species such as black walnut, hackberry and desert willow.

Affected Resources

The following resources or values are not present or would not be affected by the authorization of livestock grazing on these allotments: Areas of Critical Environmental Concern, Cultural Resources, Floodplains, Native American Religious Concerns, Visual Resources, Prime or Unique Farmland, Minority/Low Income Populations, Hazardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness. Cultural resources are not usually adversely affected by livestock grazing, although concentrated livestock activity such as around livestock water troughs can have adverse effects on the cultural resource. Prior to authorizing range improvements, a Class III Cultural Survey must be completed ensuring cultural resources will not be affected. There are one known cultural resource within these allotments. Affected resources and the impacts resulting from livestock grazing are described below.

Vegetation

Affected Environment

The Indian Bluff allotment is comprised of two predominant vegetation community types arranged in a mosaic over the allotment. The Mixed Desert Shrub and Grassland savannah communities dominate with Pinon and Juniper grassland and Draws, Drainages and Canyons communities scattered throughout. Perennial and annual forb production fluctuates widely from year to year. General objectives or guidelines for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997) and the Roswell Draft RMP/EIS (BLM 1994).

Mixed Desert Shrub Community Type (MDS)

The primary consideration in listing range sites under this community type is topography influenced by drainages, fans, and mesas with shrubs and halfshrubs comprising from 10 to 35 percent of the potential plant community.

The mixed desert shrub type occurs from gently sloping, undulating terrain to breaks and escarpments which are rough, broken and dissected by drainages. Elevations range from 2,500 feet to 4,100 feet. This type is found scattered throughout the resource area intermingled with a short- or mid-grass habitat type.

Vegetation in this community is somewhat sparse and is comprised of desert grasses, shrubs and cacti. Forbs can become abundant following periods of rainfall. The predominant shrub species include creosote, mesquite, tarbush, saltbush, little leaf sumac, and sage. Common cacti encountered are claret cup, cholla, prickly pear and eagle claw. Forbs include plantain, globe mallow, and buckwheat. Grasses include fluffgrass, sideoats grama, black grama, dropseed and galleta.

Grassland Community Type (GR)

Grasslands are intermixed with shrub and half shrub communities. Grasslands are more common in the sandy and clay loam soil types. The typical grass communities consist of sideoats grama, black grama, hairy grama, three awn, vine mesquite, sand dropseed, tobosa, blue grama, muhly, burrograss, vine mesquite, NM feathergrass, and bottlebrush squirreltail. Alkali sacaton can be found in the drainages and draws. Shrub and half shrub communities are more prevalent, and sometimes dominate, in the soil types that are silt and cobbly loams with gravels common in the soil profile. The typical shrubs that are present include four wing saltbush, yucca, cholla cactus, winterfat, algerita, pinyon pine, and juniper.

Drainages/Draws/Canyons Community Type (DDC)

The primary consideration in listing range sites under this community type is topography influenced by drainage of water from adjacent sites. Examples include steep to very steep slope faces of mesas or canyons, gently sloping to moderately steep canyon walls, hillsides, and bottoms of broad major drainages.

The resource area is dissected by many drainages due to the influence of the Sierra Blanca and Capitan Mountains to the west and the LIano Estacado to the east. These drainages are also referred to as arroyos, draws, canyons and xeroriparian areas. These watersheds eventually drain into the Pecos River, which bisects the resource area from north to south.

This community type supports a more varied vegetation composition than the surrounding communities. This community type is directly influenced by runoff from seasonal storms (usually summer and winter) with brief, intermittent flows. This type is found in all of the other community types, but to a lesser extent in the Mixed Shrub Malpais and Shinnery Oak/Dune community types. This type may also support riparian areas but may not be influenced by permanent water.

Drainages, draws and canyons are an important component of wildlife habitat in the resource area due to the variety of vegetation and because they provide natural pathways between upland and lowlands. Approximately 24 percent (116) of wildlife species in the resource area use this community type.

Pinon/Juniper Community Type (PJ)

The primary consideration in listing range sites under this community type is topography influenced by higher hills and mountains with juniper, pinon or mountain mahogany in the description of the potential plant community.

The pinon/juniper community type is typically found in the mountain slopes and rolling foothills in the west half of the resource area. Smaller areas are scattered in the lower elevations, intermingled with the shortgrass habitat type. Slopes range from 15 to 75 percent, averaging 20 to 30 percent. The average elevation is from 4,500 feet to 7,500 feet.

The majority of the community type occurs at Fort Stanton, where an intermingling of several other habitat types can be found. These include the riparian/wetland, drainages/draws/canyons and grassland types. The overstory is dominated by oneseed juniper, pinon pine, and alligator juniper. Ponderosa pine can be found in protected canyons bottoms and along the Rio Bonito. The shrubby understory includes wavyleaf oak, little leaf sumac, mountain mahogany, algerita and fourwing saltbush. Forbs and grasses are represented by such species as wild buckwheat, sagewort, greenthread, sideoats grama, blue grama, creeping muhly, wolftail, fescue and wheatgrass.

Approximately 29 percent (143) of the wildlife species in the resource area use this community type. Faunal diversity is high, reflecting the vegetational and structural diversity of the pinon/juniper complex contribution to the diversity of wildlife species.

Rangeland Monitoring

The Rangeland Health assessments indicate a concern with invasive plants, most notably cholla. Juniper and cholla can be found throughout the allotment with juniper dominating the soil types that have a higher percentage of gravel and cobbles at or near the soil surface. The Rangeland Health assessments for this allotment can be viewed by the public at the website:
www.blm.gov/nm/st/en/fo/Roswell_Field_Office/roswell_document_library.html

Rangeland monitoring studies have been established in key areas within the allotment. Table 2 below lists the key areas, identified by the vegetation ID number, within each allotment as well as the ecological site

associated with each key area. These permanent sites are used to track vegetation changes and to determine proper stocking rates.

Table 2. Key Areas		
ALLOTMENT NAME & NUMBER	**KEY AREA**	**ECOLOGICAL SITE**
64090 – Indian Bluff		
Pasture Name		
East Sampson	965	Shallow SD-3
West Sampson	966	Very Shallow CP-4
North Camp Well	969	Very Shallow CP-4
#2	967	Shallow SD-3
South Camp Well	970	Shallow SD-3
Antelope	968	Very Shallow CP-4
East Twin Butte	971	Very Shallow CP-4
West Twin Butte	972	Loamy SD-3
Crooked Creek	979	Draw SD-3
Dark Canyon	975	Very Shallow CP-4
South Turner	978	Limestone Hills CP-4
Horseshoe	976	Draw SD-3
East Turner	974	Very Shallow CP-4
Indian Bluff	980	Shallow SD-3
Sixteen	977	Very Shallow CP-4
Felix	981	Loamy SD-3
SW Twin Butte	973	Limestone Hills CP-4

The description for the ecological sites was developed by the Soil Conservation Service (now referred to as the Natural Resource Conservation Service) in their ecological site guides. Ecological site descriptions are available for review at the Roswell BLM office, any Natural Resources Conservation Service office or accessed at www.nm.nrcs.usda.gov.

From 1978 to 1999 agencies were using the traditional range condition methodology to depict range condition. This compared collected rangeland monitoring information with the potential vegetation community in terms of species composition by weight. The rating is based on a scaled of 0 to 100 with 100 being the actual representative site.

In 1999 the Natural Resource Conservation Service (NRCS) revised the methodology for comparing the existing vegetation community with the potential vegetation community and to aid in the determination of ecological condition. This methodology is called the Similarity Index (SI). The BLM is currently incorporating this revision into the monitoring and evaluation processes. The SI compares existing vegetation data (collected from rangeland monitoring) with the potential vegetation community described in the NRCS ecological site guide for that site. The index is based on a scaled of 0 to 100 with 100 being the actual representative site. For example, the Loamy SD-3 ecological (range) site, the normal year production is about 900 pounds per acre. The index takes into account vegetation species present and the relative amount of production for each species when compared to the potential for the range site.

The Roswell Field Office is currently in the process of integrating the revised methodology into current monitoring and evaluation processes. The traditional range condition rating method (used from 1980 to 1998) is retained for comparison purposes. The percent bare ground and rock found on the allotment fall within the parameters established by the RMP/EIS for this vegetative community. Copies of the monitoring data and the analysis of the data are available at the Roswell Field Office.

Rangeland Health Assessment data was collected in fiscal year 2005. Analysis of the rangeland health assessments indicates that all three indicators (biotic, hydrology, and soils) have been met for the allotment.

For a detailed analysis please refer to the data sheets listed at the above web address or the web address below. The long term vegetative production, ground cover and trend data for the allotment is also available at the following website address: http://nm.blm.gov/rfo/index.htm.

Noxious and Invasive Weeds

Noxious weeds affect both crops and native plant species in the same way, by out-competing for light, water and soil nutrients. Losses are attributed to decreased quality and quantity of agricultural products due to high levels of competition from noxious weeds and infestations. Noxious weeds can negatively affect livestock productivity by making forage unpalatable to livestock thus decreasing livestock productivity and potentially increasing producer's feed costs. Potential noxious weed species include musk thistle and Russian knapweed. Russian knapweed, hoary cress and musk thistle are documented along US Highway 70/380 .There are no known populations of noxious weeds on the allotment.

Environmental Impacts

Under the proposed action the vegetation in the Mixed Desert Shrub and Grassland community will continue to be grazed and trampled by domestic livestock as well as other herbivores. The area has been grazed by livestock since the early part of the 1900's, if not longer. Ecological condition and trend is expected to remain stable and/or improve over the long term at the permitted number of livestock.

Upland sites would reflect a static ecological condition trend at the existing permit level. Some grassland areas would remain static due to the influence of cholla and juniper. In the long term, cholla treatments may be necessary to ebb the encroachment of cholla onto historical grassland sites.

Range monitoring data indicate that the vegetation is sustainable to meet multiple resource requirements and forage at the permitted use level under the Proposed Action. Data indicate that livestock grazing is compatible with vegetation cover and composition objectives. In addition to the upward trend in ecological condition, monitoring data show the vegetative resources have been improved and sustained since monitoring began in 1981.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover would increase over the long term in some areas. Grasslands in the uplands would increase in cover and composition, but composition would be tempered by mesquite somewhat dominating the shrub component. Alkali sacaton in the bottomlands would, in the short term, increase in cover and composition but would then taper off in the long term, becoming decadent from the lack of standing vegetation removal by grazing.

Soils

Affected Environment

The following soil surveys were was used to describe and analyze impacts to soils on these allotments: The Soil Survey of Chaves County New Mexico, Southern Part (USDA Soil Conservation Service (1980). There are several soil map units represented on the allotment that cover the BLM owned lands: The soil units covering the most area are described below in Table 3, more in depth information can be found in the soil survey.

Table 3. Soil Units	
ECOLOGICAL SITES	**SOIL DESCRIPTIONS**
Very Shallow CP-4 Ector-Rock outcrop complex, 0-9% slopes (EcC)	The soils on this site are very shallow to shallow and well drained. Permeability is moderate. The water holding capacity is very low, runoff is medium and the hazard of water erosion is moderate for the Ector soils while the runoff for the Rock Outcrop is rapid. The hazard of soil blowing is slight. Effective rooting depth is 4 to 20 inches.
Limestone Hills CP-4 Ector-Rock outcrop complex, 9-30% slopes (EcD)	The Ector soil is on hills and ridges, and Rock outcrop is on side slopes, ridge shoulders and breaks. Rock outcrop is exposed areas of unweathered limestone. The difference in the Ector-Rock Outcrop complex, 0-9% slopes and this soils description is the lower percentage of Ector soils here in addition to the increased slopes.
Shallow SD-3 Loxier-Tencee Complex (Lt)	This complex occurs on low, limestone and indurated caliche hills with slopes of 1 to 9 percent. It consists of about 50% Lozier cobbly loam, 30 % Tencee cobbly loam and includes some Rock outcrop, Upton, Reakor, Atoka, Pecos and Dev soils. Runoff is medium. The hazard of water erosion is slight or moderate and the hazard of soil blowing is slight Permeability is moderate and available water capacity is 1.5 to 2.5 inches. Effective rooting depth to limestone bedrock is 6 to 15 inches.
Loamy SD-3 Reakor-Pecos association (RH)	This association occurs in valleys between low hills in limestone areas. Slopes are from 0 to 3 percent. The association consists of about 55 percent Reakor loam, 35 percent nonsaline Pecos silty clay loam and 10 percent less extensive soils. The Reakor soil is found on the fans while the Pecos soils are found on the floodplains. Runoff is slow to medium. The hazard of water erosion is moderate and the hazard of soil blowing is slight, The soils are considered to be deep and well drained, with moderate permeability and available water capacity is 9 to 12 inches. Effective rooting depth Is 65 inches or more.
Draw CP-4 Pecos – Dev association (PH)	This association occurs in valleys between limestone hills with slopes of 0 to 5 percent. It consists of about 35 percent Pecos silty clay loam, nonsaline; 30 percent Dev cobbly loams and 35% less extensive soils. The Pecos soils are level to nearly level and found on the flood plains, in areas which are rarely flooded. The Dev soils are also on the flood plains, but are found in those areas which are more commonly flooded. Runoff is medium or slow with moderate hazard of water erosion and the hazard of soil blowing is slight.
Loamy/Draw SD-3 Bigetty-Pecos association (BP)	The association occurs on the channeled flood plains of the Rio Hondo and the Rio Felix. It is rarely flooded. Slopes are from 0 to 1 percent. Runoff is slow. The hazard of erosion is slight. Soils are deep and well drained. Permeability is moderately slow, and available water capacity is 11.5 to 12.5 inches. Effective rooting depth is 60 inches or more.

Environmental Impacts

Under the Proposed Action (no action), livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975). Producing forage and protecting the soil from further erosion would then be more difficult. The greatest impacts of removing vegetation and trampling would be expected in areas of concentrated livestock use, such as trails, waters, feeders, and shade.

Under the Proposed Action (no action) rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion. Low/moderate forage quality plants provide protection to the soils resource. Cumulative long term monitoring data reflect the soils are being adequately protected.

Under No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be

sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Watershed – Hydrology

Affected Environment

The watershed and hydrology in the area is affected by land and water use practices. The degree to which hydrologic processes are affected by land and water use depends on the location, extent, timing and the type of activity. Factors that currently cause short-lived alterations to the hydrologic regime in the area include livestock grazing management, recreational use activities, groundwater pumping and also oil and gas developments such as well pads, permanent roads, temporary roads, pipelines, and powerlines.

Environmental Impacts

Livestock grazing management and range improvement projects can result in long-term and short-term alterations to the hydrologic regime. Peak flow and low flow of perennial streams, ephemeral, and intermittent rivers and streams would be directly affected by an increase in impervious surfaces resulting from the construction of the well pad and road. The potential hydrologic effects to peak flow is reduced infiltration where surface flows can move more quickly to perennial or ephemeral rivers and streams, causing peak flow to occur earlier and to be larger. Increased magnitude and volume of peak flow can cause bank erosion, channel widening, downward incision, and disconnection from the floodplain. The potential hydrologic effects to low flow is reduced surface storage and groundwater recharge, resulting in reduced baseflow to perennial, ephemeral, and intermittent rivers and streams. The direct impact would be that hydrologic processes may be altered where the perennial, ephemeral, and intermittent river and stream system responds by changing physical parameters, such as channel configuration. These changes may in turn impact chemical parameters and ultimately the aquatic ecosystem.

Long-term direct and indirect impacts to the watershed and hydrology would continue for the life of the livestock grazing management and range improvement projects and would decrease once reclamation of the range improvement projects has taken place. Short-term direct and indirect impacts to the watershed and hydrology from access roads that are not surfaced with material would occur and would likely decrease in time due to reclamation efforts.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the hydrologic regime. Low/moderate forage quality plants provide protection to the soils resource and hydrologic regime. Cumulative long-term monitoring data reflect the hydrologic regime is being adequately protected.

Under the No-Grazing Alternative, any adverse impact from livestock grazing management and range improvement projects would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Floodplains

Affected Environment

Portions of the grazing allotment are located in the 100-year floodplain. For administrative purposes, the 100-year floodplain serves as the basis for floodplain management on public lands. It is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983) which describes a Zone A as the “Area of the 100-year flood”. Current development on the floodplain consists of two-track roads and several miles of boundary fence in the area.

Environmental Impacts

Surface disturbance from the development of surface facilities and buried pipelines can result in impairment of the floodplain values from removal of vegetation, removal of wildlife habitat, impairment of water quality, decreased flood water retention and decreased groundwater recharge.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the floodplain values. Low/moderate forage quality plants provide protection to the floodplain values. Cumulative long-term monitoring data reflect the floodplain values are being adequately protected.

Under the No Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Water Quality

Affected Environment – Surface Water

No perennial surface water is found on the Public Land on this allotment. Ephemeral streams occur on Public Land on this allotment.

Environmental Impacts – Surface Water

Direct impacts to surface water quality would be minor, short-term impacts during stormflow. Indirect impacts to water-quality related resources, such as fisheries, would not occur.

Affected Environment - Ground Water

Fresh water sources are in the Quaternary Shallow Alluvium Aquifer. Approximate depth to water in area ranges from 50 to 100 feet in shallow alluvial aquifer and 400 to 700 feet in the San Andres Aquifer (New Mexico Office of the State Engineer Data).

Environmental Impacts – Ground Water

The proposed action would not have a significant effect on ground water. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect surface and groundwater. Low/moderate forage quality plants provide protection to the surface and groundwater. Cumulative long-term monitoring data reflect the surface and groundwater are being adequately protected.

Under the No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Wildlife

Affected Environment

The range of wildlife habitat includes open gently undulating grasslands, rolling limestone hills with shrubby species and various sizes of draws and swales that can support large woody species such as hackberry and black walnut. Although a dry allotment with no riparian areas or natural springs, the allotment provides a variety of habitat types for terrestrial wildlife species because of it's juxtaposition on the landscape, at the lower elevation foothills of the Sierra Blanca Mountains to the west and Capitan Mountain to the north. It is a dry, arid environment with numerous flashy drainages that run during high precipitation events and then quickly recede to a dry streambed with some remnant pooling. The diversity and abundance of wildlife species in the area is due to the presence of a mixture of grassland habitat and mixed desert shrub vegetation in an area topographically characterized by open, gently undulating terrain to hilly limestone terrain with numerous xeroriparian drainages throughout the landscape basically trending east toward the Pecos Valley. The major drainages include Twin Butte Canyon, Monument Canyon, Cedar Canyon, Dark Canyon, Crooked Canyon, Made Well Draw, Antelope Draw, and Rio Felix.

The Indian Bluff allotment is within the Macho Wildlife Habitat Area (WHA) with management emphasis on pronghorn antelope and wintering raptors

Numerous avian species use the area during spring and fall migration, including non-game migratory birds. The drainages serve as movement corridors between higher and lower elevations. The unique vegetation of the draws also provide habitat ("traps") for migratory birds. Common bird species are mourning dove, scaled quail, turkey vulture, mockingbird, white-crowned sparrow, black-throated sparrow, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, and occasionally golden eagle and ferruginous hawk.

Common mammal species using the area include mule deer, pronghorn, Barbary sheep, coyote, gray fox, bobcat, striped skunk, porcupine, raccoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat. A variety of herptiles also occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad. Resident bats in the area are Townsend's western big-eared (Coryhinorinus townsendii), cave bat (Myotis velifer) and small-footed bat (Myotis celiolabrum). None of these bat species are threatened or endangered.

Environmental Impacts

Under the Proposed Action (no action), livestock grazing management and range improvement projects designed with consideration for wildlife may generally enhance the quality of wildlife habitat primarily from the availability of water sources in this arid environment

The permitted use as described in the Proposed Action and No Action is not anticipated to have new notable adverse impacts to wildlife forage and availability as grazing by domestic livestock has occurred for decades and under different management schemes.

It is expected that no new impacts to wildlife habitat would occur from authorized livestock grazing with cattle. A long term benefit to wildlife movement would occur as netwire fencing would no longer be needed and would eventually be replaced, in part or all, with 4-strand barbed wire/smooth wire fences and passes in those pastures that are primarily cattle operations.

Vegetation condition, forage production, and habitat diversity may improve, and wildlife species distribution and abundance may remain static or possibly increase depending on the grazing management regime. The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution

and abundance, but may potentially increase grazing pressure in those same areas. Short-term impacts of range improvement projects would be the temporary displacement of wildlife species during possible range improvement construction activities.

Under the No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the inability to control livestock use of the parcels because of the expense of segregating the lands with fencing, and legal access to administer isolated parcels of public land. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts.

Special Status Species, Including Threatened and Endangered Species

Affected Environment

Livestock grazing as a result of the grazing permit, may affect, but not likely adversely affect the bald eagle. With this determination, consultation with the U.S. Fish and Wildlife Service is not required. It is expected that habitat and range condition would be maintained or improved by authorizing grazing conducive with vegetation production goals. Habitat for wintering bald eagles would not have significant negative impacts by livestock grazing since there is no presence of riparian habitats nearby, and no active or suitable nesting habitat. Positive impacts may result to the bald eagle from the proposed action by increasing the amount of carrion during the late winter and early spring on sheep allotments in the vicinity.

Environmental Impacts

Under any of the alternatives, there would be no change to habitat of special status species.

Air Quality

Affected Environment

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility.

The allotment is in an area that is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment. Air quality in the area is generally good and is not located in any of the areas designated by the Environmental Protection Agency as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act (CAA).

Air quality in the region is generally good, with winds averaging 10-16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Air quality would temporary be directly impacted with pollution from enteric fermentation (ruminant livestock), chemical odors, and dust. Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action than No-Grazing Alternative. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

The federal Clean Air Act requires that air pollutant emissions be controlled from all significant sources in areas that do not meet the national ambient Air quality standards. The New Mexico Air Quality Bureau is responsible for enforcing the state and national ambient air quality standards in New Mexico. At the present time, the counties that lie within the jurisdictional boundaries of the Roswell Field Office are classified as in attainment of all state and national ambient air quality standards as defined in the CAA of 1972, as amended.

The Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the National Ambient Air Quality Standard (NAAQS) for particulate matter ranging from 2.5 micron or smaller particle size. This ruling became effective on December 18, 2006, stating that the 24-hour standard for PM2.5, was lowered to 35 ug/m^3 from the previous standard of 65 ug/m^3. This revised PM2.5 daily NAAQS was promulgated to better protect the public from short-term particle exposure. The significant threshold of 35 ug/m^3 daily PM2.5 NAAQS is not expected to be exceeded under the proposed action.

Climate

Affected Environment

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. GHG's and the potential effects of GHG emissions on climate are not regulated by the EPA, however climate has the potential to influence renewable and non-renewable resource management.

Greenhouse gases, including carbon dioxide (CO2) and methane (CH4), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, climate has the potential to influence renewable and non-renewable resource management. The EPA's Inventory of US Greenhouse Gas Emissions and Sinks found that in 2006, total US GHG emissions were over 6 billion metric tons and that total US GHG emissions have increased by 14.1% from 1990 to 2006. The report also noted that GHG emissions fell by 1.5% from 2005 to 2006. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation.

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures.

A 2007 US Government Accountability Office (GAO) Report on Climate Change found that, "federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others: 1) physical effects such as droughts, floods, glacial melting, and sea level rise; 2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and 3) economic and social effects, such

as adverse impacts on tourism, infrastructure, fishing, and other resource uses." It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed lease parcels and subsequent actions.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

Environmental Impacts

Climate change analyses are comprised of several factors, including greenhouse gases (GHGs), land use management practices, the albino effect, etc. The tools necessary to quantify climatic impacts from the Proposed Action are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that may contribute to climate change. Qualitative and/or quantitative evaluation of potential contributing factors within the planning area is included where appropriate and practicable.

Livestock Management

Affected Environment

In the past, this allotment has been permitted to be grazed yearlong by cattle and sheep with a small percentage of horses. Generally there are only enough horses authorized to work stock. The permit authorized 1296 AUs, and this use level was based on Livestock Use Agreements. Grazing is by a cow/calf and sheep operation with some horses

The allotments contain about 41,417 acres of public land (see Location Map). Land ownership is intermingled with private land. Current range improvement projects for the management of livestock include earthen tanks, wells, and several drinking troughs with associated pipelines, pasture and boundary fences and corrals.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze public lands within the allotment. Existing pasture configurations and water developments would remain the same.

Under No-Grazing Alternative, there would be no livestock grazing authorized on public lands. The public lands would have to be fenced apart from the private lands or livestock would be considered in trespass if found grazing on public land (43 CFR 4140.1(b)(1)). Exclusion of livestock from the public land would require approximately 79.5 miles of new fence at an approximate cost of $357,750.00 ($4,500/mile). This expense would be borne by the private landowner. Range improvements on public land would not be maintained and the BLM would have to compensate the permittee if any of the improvements were cost shared at the time of their authorization.

Under No-Grazing Alternative, the overall livestock operation could be reduced by 943 AUs (those attached to the public lands) to approximately 0 AUs. This would have an adverse economic impact on the permittee.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in Rangeland Reform '94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994) and in the Roswell Resource Area Draft RMP/EIS (BLM 1994). The no livestock grazing alternative was not selected in either document.

Recreation

Affected Environment

The allotment provides habitat for numerous game species including desert mule deer, pronghorn, mourning dove and scaled quail. Predator and feral pig hunting may occur on the allotment, as well as trapping for predators or furbearers.

General sightseeing, wildlife viewing and photography are non-consumptive recreational activities that may occur. Rock & mineral collectors find various minerals unique to the area, such as quartz.

Environmental Impacts

Under the Proposed Action, game and non-game wildlife species could realize long-term benefits through the improvement of habitat. It is expected that hunter success and wildlife viewing opportunities would be enhanced.

Under No-Grazing Alternative, no conflicts between ranching activities and recreational use would occur on public lands. Success of hunts and non-consumptive opportunities would remain the same or slightly improve. Vandalism could still occur to range improvements. Conflicts with OHV use would continue.

Cave and Karst

Affected Environment

This allotment is located within a designated area of medium Cave or Karst Potential. A complete significant cave or karst inventory has not been completed for the public land located in this grazing allotment.

Environmental Impacts

There are no known significant caves in the allotment. Should a significant cave or karst feature be discovered on public land within this allotment, that cave or feature may be fenced to exclude livestock and off-highway vehicle use and the Roswell Field Office Cave Manager would be notified.

IV. CUMULATIVE IMPACTS

A cumulative impact is defined in 40 CFR 1508.7 as:

> "the impact on the environment which results from the incremental impact of the action
>
> when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The analysis of cumulative impacts focuses on the geographical area defined as the set of the allotments within the Salt Creek watershed as illustrated on the attached map. The specific resources being impacted are limited to those that are most important in terms of impacts resulting from remedial actions needing to be implemented to improve current environmental conditions.

The incremental impact of issuing a grazing permit on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the identified resources include: livestock authorization on other allotments in this area; oil and gas activities on the uplands; rights-of-way

crossing the area; and recreation use, particularly off-highway vehicles. All authorized activities which occur on BLM land can also take place on state and private land.

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Oil and gas activities began in the early part of the 20th century. These activities are still occurring today, and are expected to continue into the foreseeable future to some degree.

The analysis of cumulative impacts is driven by major resource issues. The proposed action is the authorization of livestock grazing on these allotments. The cumulative impacts to these allotments and adjacent allotments are insignificant.

The Proposed Action (no action) would not add incrementally to the cumulative impacts to threatened and endangered species, or to water quality. The conclusions, that impacts to these resources from grazing authorization would not be significant are discussed in detail in Section III of the EA.

If the No-Grazing Alternative were chosen, some adverse cumulative impacts would be eliminated, but others would occur. Grazing would no longer be available as a vegetation management tool, and BLM lands within the allotment would be less intensively managed.

While global and national inventories of GHG are established, regional and state-specific inventories are in varying levels of development. Quantification techniques are in development – for example, there is a good understanding of climate change emissions related to fuel usage; however measuring and understanding the effects are less comprehensive. Analytical tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined.

Due to the absence of regulatory requirements to measure GHG emissions it is not possible to accurately quantify potential GHG emissions in the affected areas as a result of renewing grazing leases. Some general assumptions however can be made: livestock, operating vehicles to support livestock grazing, and vehicles transporting livestock contribute to GHG emissions.

The New Mexico Greenhouse Gas Inventory and Reference Case Projection 1990-2020 (Inventory) states agricultural activities, including manure management, fertilizer use and livestock account for 7% of New Mexico's total GHG emissions. The Inventory estimates approximately 6.4 million metric tons GHG emissions are projected by 2010 from all agricultural activities in the state. The Inventory states that GHG emissions from livestock, agriculture soil management and field burning were about 6.2 MMT of CO_2 equivalents in 2004. The Inventory makes the assumption that dairy cattle production will grow at the same rate as the general population and no growth in the other categories within agriculture.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated.

Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions. Forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be more affected by climate change.

V. MITIGATION MEASURES

Vegetation monitoring studies will continue if a new grazing permit was issued under the Proposed Action. Changes to livestock management would be made if monitoring data showed adverse impacts to the vegetation.

If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken at that time to mitigate those impacts.

VI. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

VII. SOCIO-ECONOMIC FACTORS

The Proposed Action as outlined in this document is not anticipated to alter the socio-economic conditions for either the permittees or Chaves County. Should the No-Grazing Alternative be adopted, economic impacts would occur. Chaves County would lose tax revenues on approximately 943 head of cattle annually.

Under the No-Grazing Alternative, it would be the responsibility of the permittee to prevent livestock from grazing on the public lands. To accomplish this, the permittees would most likely have to construct fences to exclude the public land. Approximately 79.50 miles of new fence would be needed at a cost of approximately $357,750.00 ($4,500/mile). BLM would also have to provide compensation to the permittee for their interest in authorized range improvements due to the exclusion of livestock grazing. These costs could be reduced or mitigated by land exchanges with either the state or the permittee to block up the public land.

IX. BLM TEAM MEMBERS

Helen Miller - Rangeland Management Specialist
Adam Ortega - Rangeland Management Specialist
Shane Trautner - Rangeland Management Specialist
Kyle Arnold - Rangeland Management Specialist
Mike McGee - Hydrologist
Justin W. Peters - Archaeologist
Glen Garnand – Environmental Coordinator
Bill Murry – Outdoor Recreation Planner
Dan Baggao – Wildlife Biologist
Randy Howard - Wildlife Biologist
Jerry Dutchover – Geologist
John Simitz – Geologist
Mike Bilbo – Cave Specialist

X. PERSONS AND AGENCIES CONSULTED

New Mexico Department of Game and Fish
New Mexico Energy, Minerals, and Natural Resources Department
- Forestry and Resource Conservation Division
New Mexico Environment Department - Surface Water Quality Bureau
New Mexico State Land Office
U.S. Fish and Wildlife Service - Ecological Services
U.S. Fish and Wildlife Service - Fishery Resources Office

XI. LITERATURE CITED

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Environmental Assessment Checklist, DOI-BLM- NM- P010-2011-130 EA

Resources	Not Present on Site	No Impacts	May Be Impacts	Mitigation Included	BLM Reviewer	Date
Air Quality			X	X	SWA Spec/Hydro. /s/ Michael McGee	7/15/2011
Soils			X	X		
Watershed Hydrology			X	X		
Floodplains			X	X		
Water Quality - Surface			X	X		
Water Quality - Ground			X	X	/s/ Michael McGee Geologist/Hydrologist	7/15/2011
Cultural Resources		X			/s/ Justin W. Peters Archeologist	15June2011
Native American Religious Concerns	X					
Paleontology	X					
Areas of Critical Environmental Concern	X				Plan & Env. Coord. /s/Glen Garnand	7/19/2011
Farmlands, Prime or Unique	X				Realty /s/Tate Salas	6/24/2011
Rights-of-Way	X					
Invasive, Non-native Species			X	X	Range Mgmt. Spec. /s/ Shane Trautner	May 25, 2011
Vegetation			X	X		
Livestock Grazing			X	X		
Wastes, Hazardous or Solid	X	X			/s/ Ernest Jaquez Nat. Resource Spec.	June 22, 2011
Threatened or Endangered Species	X				/s/ D Baggao Wildlife Biologist	8/31/2011
Special Status Species	X					
Wildlife			X	X		
Wetlands/Riparian Zones	X					
Wild and Scenic Rivers	X				/s/Bill Murry Outdoor Rec. Plnr.	6/21/2011
Wilderness	X					
Recreation		X				
Visual Resources		X				
Cave/Karst			X	X	/s/ Michael J. Bilbo Cave Specialist	5/31/2011
Environmental Justice		X			/s/ Jared Reese Nat. Resource Spec.	07/06/2011
Public Health and Safety		X				
Solid Mineral Resources		X			/s/ Jerry Dutchover Geo/SPS	05/23/11
Fluid Mineral Resources			X		/s/ John S. Simitz Geologist	7/13/2011